

What is claimed is:

1. A radiation image storage panel having a stim-
5 ulable phosphor layer and a light-reflecting layer pro-
 vided thereon, wherein said stimuable phosphor layer
 scatters both of a stimulating light and a stimulated
 emission emitted by said phosphor layer with a scattering
 length of 5 to 20 μm and said light-reflecting layer
10 scatters a stimulating light with a scattering length of
 5 μm or less.
2. The radiation image storage panel of claim 1,
 wherein said stimuable phosphor layer comprises stimul-
 able phosphor particles and a binder in a weight ratio of
15 1:10 to 1:50.
3. The radiation image storage panel of claim 2,
 wherein said stimuable phosphor particles have a mean
 particle size in the range of 2 to 10 μm .
- 20 4. The radiation image storage panel of claim 2,
 wherein said stimuable phosphor particles are contained
 in the phosphor layer at a packing density of 60 vol.% or
 more.
- 25 5. The radiation image storage panel of claim 1,
 wherein said stimuable phosphor has a protective layer
 on the side opposite to the light-reflecting layer, said
 protective layer has a haze in the range of 5 to 80%.
- 30 6. The radiation image storage panel of claim 5,
 wherein said protective layer comprises a polymer materi-
 al and a filler dispersed in the polymer material, said
 filler having a mean particle size of 0.1 to 10 μm and
35 being contained in the protective layer in an amount of 5
 to 50 wt.% based on an amount of the polymer material.

7. The radiation image storage panel of claim 1, wherein a support sheet is attached to the light-reflecting layer via a cured adhesive layer.

5 8. The radiation image storage panel of claim 7, wherein the cured adhesive layer is cured in the presence of a curing agent.

9. The radiation image storage panel of claim 8,
10 wherein the curing agent is an isocyanate compound.

10. The radiation image storage panel of claim 7, wherein the cured adhesive layer has a thickness of 1 to 50 μm .

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11. A process for reading a radiation image information out of a radiation image storage panel of claim 1, which comprises the steps of:

20 placing means for emitting stimulating light and photoelectrically detecting stimulated emission in the vicinity of the radiation image storage panel on a surface side opposite to the light-reflecting layer;

25 applying a stimulating light to the stimuable phosphor layer of the radiation image storage panel with such stimulating energy that the stimuable phosphor layer emits a stimulated emission in an amount corresponding to 10 to 90% of a saturation level, while moving said means relatively to a position of the radiation image storage panel along a surface of the radiation image storage
30 panel and scanning the stimulating light in a direction differing from a direction of the movement of the means;
detecting the stimulated emission in sequence by the means; and

35 converting the detected stimulated emission into electric signals corresponding to a radiation image information.

12. The process of claim 11, wherein the stimulating light is applied to the stimuable phosphor layer of the radiation image storage panel with such stimulating energy that the stimuable phosphor layer emits a stimulated emission in an amount corresponding to 30 to 90% of a saturation level.

13. The process of claim 11, wherein the means for emitting stimulating light and photoelectrically detecting stimulated emission comprises a line sensor composed of plural photoelectric conversion elements aligned in line.

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